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Homing Instinct In Robins*

(*Turdus Migratorius*)

DEAN M. ROOSA
GOLDFIELD, IOWA

Prior to the present study, apparently no experimentation had been done on the homing instinct in the Robin (*Turdus migratorius*). Limited work has been done with the homing instinct in the Blackbird (*Turdus merula*), another species of the genus, by Ruppell (1944) and Bierens (1936) during the breeding season and by Hilprecht (1935), Dupond (1939), Koopman (1935) and Ruppell (1944) after the breeding season.

This study was conducted in the nesting season of 1963 and 1964, when a total of 53 homing trials were made with Robins captured at the nest site, removed to varying distances for release and their homing instinct observed. Apparently the only published account of homing experiments with Robins is that which I published previously (Roosa, 1964); however, that work is incorporated in the present study.

METHODS AND MATERIALS

This study was carried out in Wright County, Iowa, which is located in Northern Iowa and is of relatively flat terrain. The land is primarily agricultural and is sparsely forested, except along the two rivers, the Iowa and the Boone, which flow through the county.

All Robins were captured in Wright County, in or near the town of Goldfield. All were captured with mist nets as they flew to or from the nest. Late in the study it was learned that if a live Screech Owl (*Otus asio*) were placed on the opposite side of the net from the nest, Robins would attempt to attack the owl and become entangled in the net. This was particularly useful during the second nesting as the birds tended to build their nests somewhat higher in trees, beyond the upper level of the nets. During the second nesting, most of the Robins were captured in this fashion.

After capture, each bird was uniquely marked by use of colored bands, bright, dyes, brightly colored feathers attached to the plumage by "imping" or glueing, a hole in the remiges made by removing vanes from feather shafts in a circular pattern (Enderson, 1960), or a combination of the foregoing. All were banded with U. S. Fish and Wildlife Service bands. It was found that if certain dyes came into contact with the bird's skin, a lesion developed. Birds were transported to the point of release by automobile in a covered, darkened and well-ventilated container. No bird was confined longer than two hours. Upon release, pertinent data were recorded, as in Table I and II. Official weather maps of the United States were obtained from the United States Weather Bureau to determine any correlation

* This is one portion of a Master's degree thesis completed at Univ. of Northern Iowa in 1965.

between homing flights and weather. As wind velocities were determined by the use of the Beaufort Wind Scale, absolute velocities were not determined. Upon release, the birds were observed with binoculars until out of sight. Robins were apparently not greatly disturbed by the experience of being captured, marked and transported to new surroundings, as often they would fly to a nearby fence or post to preen before flying away. Birds were released in each compass direction and some semi-compass directions at various times of the day.

Nest sites were checked at one-half hour intervals after release and this was continued until dark and resumed the following morning at dawn. These checks were continued until the bird returned or it became evident that the return was not to be expected; nests were then checked twice a day. In several cases, the bird remained some distance from the nest for a time, making recognition difficult. This made all percentages of return minimum and all rates of return maximum. In no event was the experimental bird observed being rejected by its mate because of the color marking.

REVIEW OF RELATED LITERATURE

A search of ornithological literature revealed the article I published previously (Roosa, 1964) apparently to be the only published homing work done with Robins. However, as that research was preliminary to this study to see if homing instinct existed in the species, it is included in this article. The Robin with which Ruppell experimented was the European Robin (*Erithacus rubecula*).

Homing of the Blackbird (*Turdus merula*), a related species. The Robin and the San Lucus Robin (*Turdus confinis*), the latter species occurring sparsely in the Cape region of Lower California, are the only members of the *Turdus* genus regularly found on the North American continent, as defined by the American Ornithologists' Union. The Blackbird of Europe is a member of this genus. Experimentation with this species can be divided into the work done during and after the breeding season. During the nesting season, Ruppell (1944) displaced five Blackbirds to distances of from 1.5 to 9 miles and only one returned; Bierens (1936) transported a Blackbird 2.5 kilometers (1.56 miles) in March and it returned four months later. Outside the nesting season, Hilprecht (1935) transported two hundred sixty-nine birds in several compass directions from 210 kilometers (131 miles) to 470 kilometers (294 miles). Only one returned the same winter, while seventeen others returned the following season from the middle of April to the end of June, coincidental with the breeding season. Of the foregoing returns, one returned from 294 miles, three returned from 262.5 miles, four from 141 miles and one from 131 miles. Dupond (1939) released a bird 15 kilometers (9.3 miles) from the point of capture in April and recaptured it in the same place in July. A bird displaced by Koopman (1935) somewhere between .5 and 3.5 miles failed to return. Ruppell (1944) had no returns from eight birds displaced from one to 9.5 miles from the point of capture.

RESULTS AND DISCUSSION

Fifty-three trials were made, thirty-five with males and nineteen with females. Males were used predominately because it is felt by most authors that only the female incubates and chilling of the eggs would have resulted from the females' absence. In this study, no male was observed incubating.

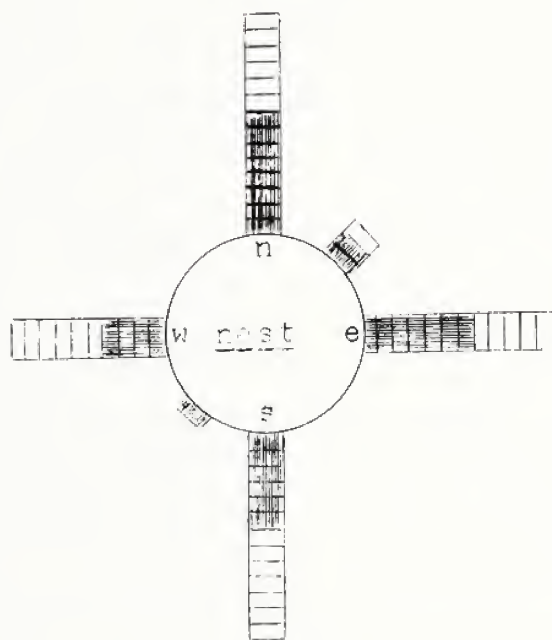


FIGURE 1

Directional differences of all Robins. Each rectangle represents one bird and the direction from the nest in which it was released. Each dark rectangle represents a successful flight, each open one an unsuccessful flight.

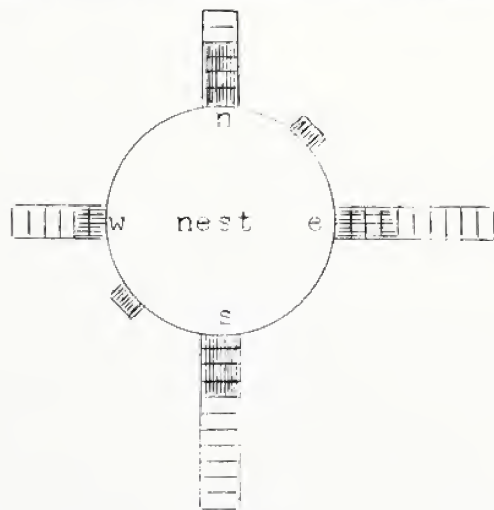


FIGURE 2

Directional differences of male Robins. Each rectangle represents one bird and the direction from the nest in which it was released. Each dark rectangle represents a successful flight, each open one an unsuccessful flight.

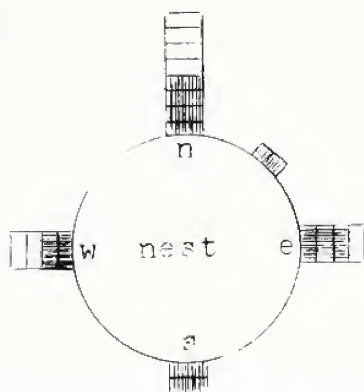


FIGURE 3

Directional differences of female Robins. Each rectangle represents one bird and the direction from the nest in which it was released. Each dark rectangle represents a successful flight, each open one an unsuccessful flight.

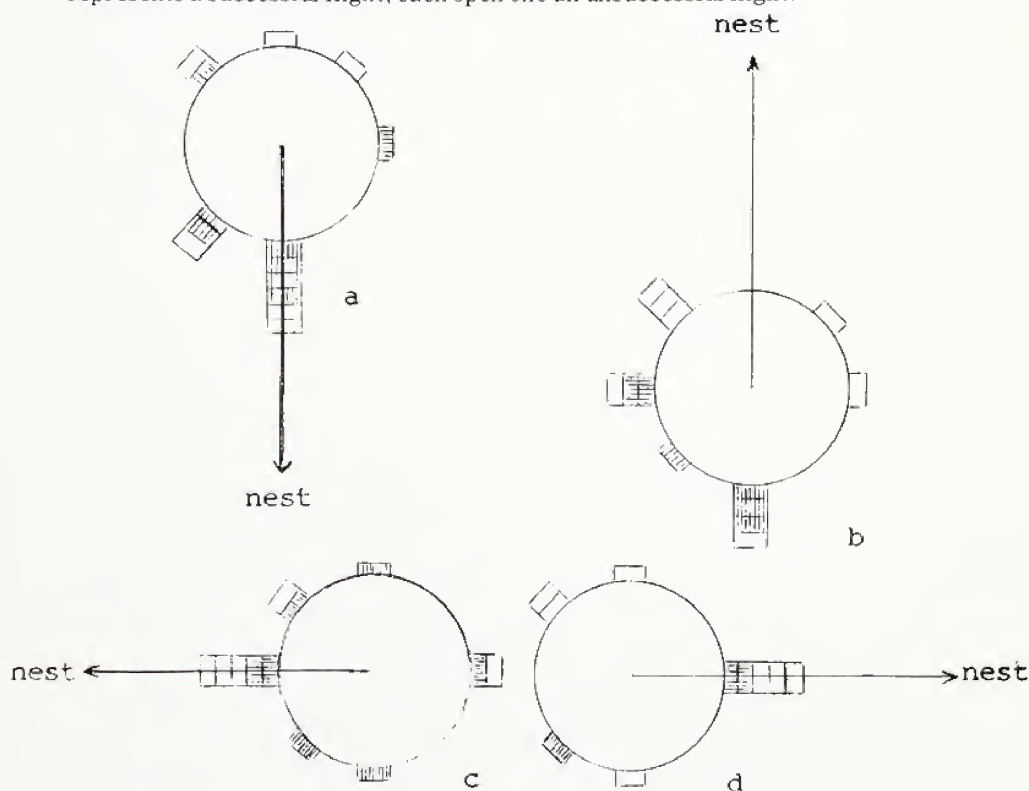


FIGURE 4

Initial heading of Robins. The arrow indicates the direction of the nest. Each rectangle represents one bird and the direction it flew upon release. Each dark rectangle represents a successful flight, each open one an unsuccessful flight.

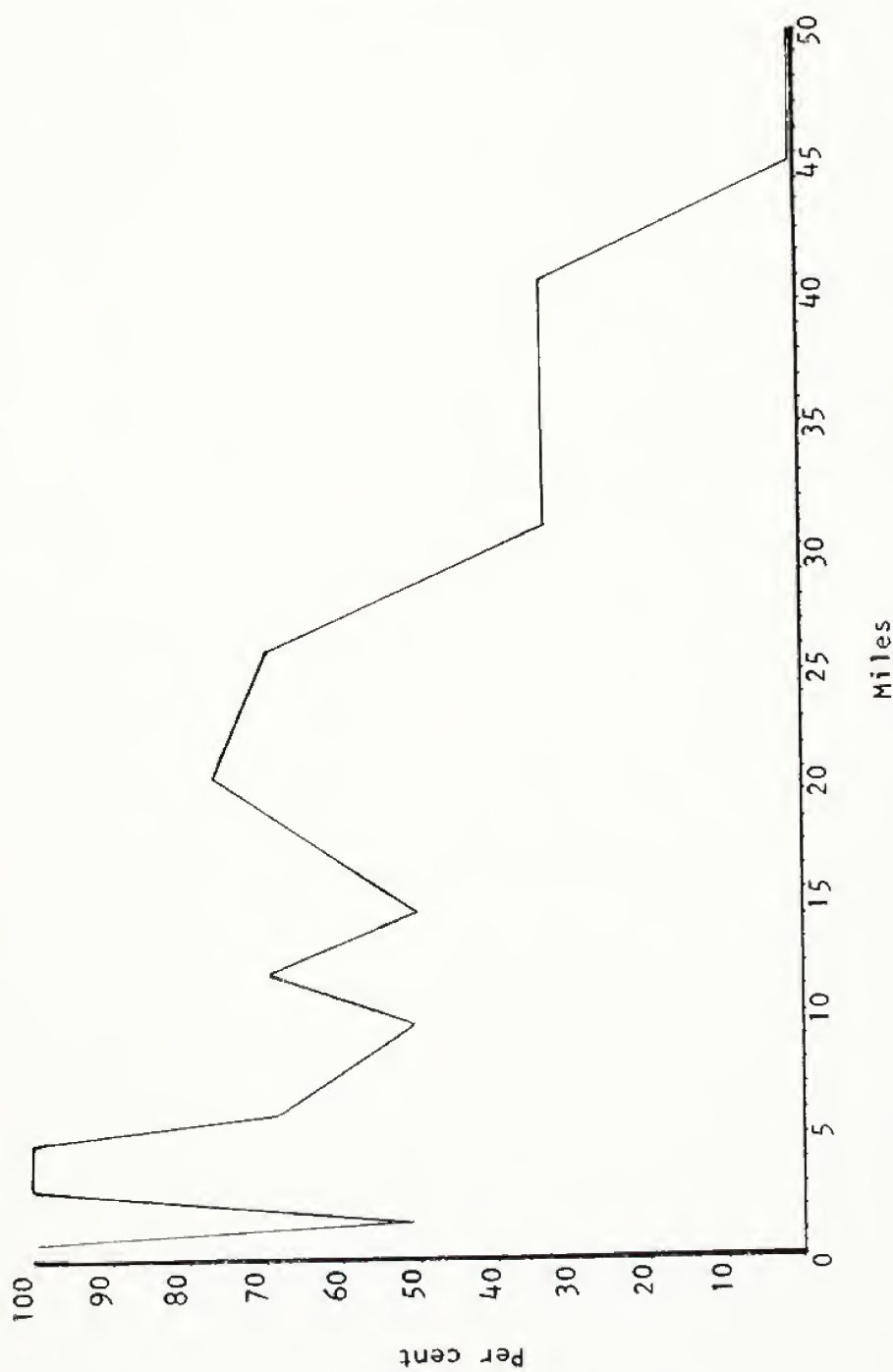


FIGURE 5
Graph showing percent of Robins returning from the various distances.

Overall results of Robin homing experiments. Of fifty-three birds displaced, twenty eight (52.8 percent) returned (Fig. 5). The distances involved were from one to 50 miles. These results will be discussed by the factors which influenced homing.

Sex of the bird as a determiner of homing ability. As most of the longer distance flights utilized males, a true evaluation of the role of sex differences cannot be made. However, below 6 miles, six of seven (86 percent) females returned. At these distances, all five (100 percent) of the males returned (Tables I and II). At distances of 6 miles and over, twenty-nine males were used. Of these ten (34 percent) returned. At these distances, six of twelve (50 percent) females returned.

Directional differences. A review of literature discloses no one direction produces markedly superior results. This was true in this study. Figures 1, 2, and 3 apply to the following discussion. Of fourteen birds displaced north, eight (53 percent) returned. Six of thirteen (46 percent) birds displaced south returned. Seven of twelve (58 percent) birds released east of their nests returned, and four of ten (40 percent) transported west returned. In two semi-compass directions, two of three (67 percent) displaced northeast returned and the single bird released southwest returned. It would seem that south should yield superior results, as the birds had migrated from that direction earlier; however, it must be concluded from this small sample that the direction of displacement has little to do with the success of homing flights of Robins. Figures 2 and 3 compare the number of males and females returning from each direction.

Initial flight direction and success of homing flights. Figure 4 shows the success of birds in homing in relation to the direction it chose upon release. Those released north of the nest (Fig 4a) and vanished from sight in the direction of the nest showed a high positive correlation as four of six (67 percent) returned. Two of three (67 percent) that flew 45 degrees away from the true homeward direction arrived. Only two of five (40 percent) that chose directions 90 degrees or more away from the nest arrived. Birds displaced south (Figure 4b) showed a high negative correlation as no bird chose the correct direction, but three of four (75 percent) of those that vanished 180 degrees from the true homeward direction arrived there. This agrees with what Griffin (1943) found to be true concerning Herring Gulls - that those which chose the incorrect direction had the best homing record. Five of ten (50 percent) of the Robins transported west chose the correct direction or a direction within 45 degrees of home. Three of four, however, arrived at the nest after choosing the wrong direction (Figure 4d).

Homing success during incubation. In 1963, all experimental Robins were taken from young. In 1964 an attempt was made to determine if the homing urge was as strong during incubation as it was after the eggs had hatched. The birds (numbers 1, 8, and 13, Table II) were removed from nests contained eggs and released 2, 6, and 12 miles from the nest. None of these birds returned, indicating a more poorly developed homing instinct during incubation. Because of the poor homing success, coupled with the fact that the male does not incubate the eggs, no further trials with incubating females were made.

Weather and homing success of Robins. Upon release of the birds, the following weather data were recorded: sky condition, barometer tendency, wind direction and velocity and temperature. Official weather maps were obtained from the U. S. Weather Bureau for analysis of cyclonic disturbances and fronts. In relation to homing success, the following pattern emerged: the approach of an

anticyclone or "high" pressure system favored homing flights; birds released at the approach of a cyclone or "low" generally had poor homing success. (Tables I and II). As an example, birds 14, 18 and 19 were released from 20 to 30 miles from the nest when a massive anticyclone dominated the upper midwest and all birds returned. Conversely, birds 7, 8, 9, 10, 17, 18, 19, 22, 23 and 28 (Table II) were all released as a cyclone approached Iowa and only two returned. Possible the obscuring of the sun by clouds at the approach of a low was a contributing factor.

Wind was not felt to be a factor in this study as the strongest winds encountered were 13-18 miles per hour. Also, birds were released at approximately the same time in different compass directions (6 and 7, 8 and 9, and 16, 17, and 18 Table I) and they all homed successfully at different angles with respect to the wind.

Distance and homing flights. Most published accounts of homing trials reveal that homing success diminished with distance. This was also true with Robins. Figure 5 shows the general decrease in returns as the distance increased. Distances of from one to 6 miles yielded 86.7 percent success; from 7 to 25 miles yielded 52 percent returns, and above 25 miles, 15.4 percent success.

Repeat trials with the same bird. Birds became very wary and hard to capture a second time. The only two captured a second time (Table II) made successful homing flights from longer distances. The record distance of 40 miles was made by a bird on its second homing flight, however, almost four days were required.

Flight speed of returning Robins. Harrison (1931) determined the flight speed of many species of birds. While he did not determine it for the Robin, he found that the Blackbird, a relative, could fly at thirty miles per hour when not alarmed. The fastest return of a Robin in this study was a male (number 12, Table II) taken 12 miles north for release. This bird required three hours and fifty minutes to return, which is a rate of three and one-tenth miles per hour. As all other rates were less, it indicates that Robins do not fly directly to the nest, but possibly utilize some random search method in homing. Tables I and II reveal that the longer flights took considerable time.

Homing from different types of terrain. Several different types of terrain were utilized in homing experiments - homing from a town to the country, from country to town, from town to town, from wooded area to prairie, and from prairie to wooded area. No difference was noted in the success of the Robin's ability to return from one type of habitat to another type. Several birds (numbers 4, 5, 6, 13, and 16, Table I and 20 and 25, Table II) had to cross at least one, and in several cases, two, rivers, with their accompanying extensive wooded areas in returning to the nest.

SUMMARY AND CONCLUSIONS

In the nesting seasons of 1963 and 1964, the homing instinct of Robins was investigated, with 53 trials being run. All birds were captured with mist nets, uniquely marked by various methods and transported to a distant point for release. Birds were taken to all compass and some semi-compass directions and released under varying weather conditions at different times of the day, in various habitats and at two stages of the nesting cycle.

Of fifty-three Robins displaced, twenty-eight (52.8 percent) returned. The distances at which Robins were released ranged from 1 to 50 miles, the longest return flight being 40 miles. This flight took almost four days, however.

Neither sex was proven superior in homing ability, but a rigorous comparison could not be made because of the larger number of males used. Males were used for most trials because only the female Robin incubates and removing the female

Table I
Results of Robin Displacement Experiments In 1963

Sex	Miles	Dir.	Date of Release	Time of Release	Sky Condition	Temp.	Wind Vel.	Wind Dir.	Barometer Tendency	Initial Heading	Return Data
1 F	1.0	NE	6-3	10 AM	Clear	80	5-8	S	Stdy	SE	6-3, 35 min.
2 M	1.0	NE	6-3	11 AM	Clear	80	5-8	S	Stdy	S	6-3, 35 min.
3 M	3.5	S	6-4	4 PM	Cloudy	78	13-18	S	Fall	W	6-6, 6 AM, 38 hrs.
4 F	3.0	W	6-5	2 PM	Clear	80	13-18	S	Rise	E	6-5, 2:40 PM, 40 min.
* 5 F	4.0	N	6-6	1 PM	Pt. Cldy	84	8-12	S	Fall	S	6-7, 1 PM, 24 hrs.
6 F	6.0	W	6-7	9 AM	Clear	86	8-12	S	Stdy	E	6-7, 10:15 AM, 1 hr., 15 min.
7 F	6.0	N	6-7	3 PM	Pt. Cldy	87	8-12	S	Fall	S	6-7, 6 PM, 3 hrs.
8 M	10.0	E	6-23	10 AM	Clear	80	13-18	SE	Rise	S	6-24, 2 PM, 28 hrs.
9 F	10.0	N	6-23	2 PM	Clear	84	13-18	SE	Rise	S	6-25, Dawn, 40 Hrs.
10 M	10.0	S	6-28	9 AM	Pt. Cldy	74	8-12	SE	Fall	W	No return
11 M	12.0	S	6-25	4 PM	Pt. Cldy	88	13-18	SE	Fall	SW	6-26, 2 PM, 22 hrs.
12 M	12.0	E	6-30	4 PM	Clear	96	4-7	E	Stdy	E	No return
13 M	12.0	W	7-1	6 PM	Clear	90	4-7	E	Stdy	E	7-2, Dawn, 10 hrs.
14 F	15.0	E	7-1	1 PM	Clear	88	4-7	E	Stdy	N	7-2, 1 PM, 24 hrs.
15 F	15.0	W	6-30	3 PM	Clear	95	4-7	E	Stdy	E	No Return
16 M	20.0	E	7-1	8 AM	Clear	78	1-4	SE	Rise	W	7-3, Dawn, 44 hrs.
17 F	20.0	S	7-4	7 AM	Clear	66	8-12	E	Stdy	SW	7-6, Dawn, 45 hrs.
18 M	20.0	N	7-4	10 AM	Clear	70	8-12	E	Stdy	NW	7-6, 4 PM, 54 hrs.
19 M	30.0	E	7-4	3 PM	Clear	76	8-12	E	Stdy	NW	7-6, 10 AM, 43 hrs.
20 M	30.0	W	7-7	8 AM	Pt. Cldy	69	8-12	NE	Rise	NW	No return
21 F	41.0	N	7-7	1 PM	Pt. Cldy	76	8-12	NE	Rise	NE	No return
22 M	50.0	W	7-7	2 PM	Pt. Cldy	76	8-12	NE	Rise	N	No return
23 M	50.0	S	7-7	3 PM	Pt. Cldy	76	8-12	NE	Stdy	NE	No return
24 F	50.0	W	7-8	4 PM	Clear	67	4-7	S	Stdy	E	No return
25 F	50.0	E	7-8	5 PM	Clear	68	4-7	S	---	W	No return

* Same bird as number 4.

Table II
Results of Displacement Experiments With Robins 1964

Bird Number	Sex	Release Miles Dir.	Date of Release	Time of Release	Sky Condition	Temp.	Wind Vel. Dir.	Barometer Tendency	Initial Reading	Return Data
* 1	F	2.0 N	5-31	1:00 PM	Clear	66	8-12 N		S	No return
2	M	2.0 WSW	6-20	12:20 PM	Clear	76	8-12 S	Rise	E	Dawn, 6-21
3	F	2.5 S	7-9	5:00 PM	Pt. Cldy	81	0-1		S	11 AM, 7-10
4	M	2.5 S	7-9	5:00 PM	Pt. Cldy	81	0-1		S	8 AM, 7-10
5	F	4.5 E	7-7	1:30 PM	Clear	91	4-7 E	Stdy	E	Dawn, 7-8
6	F	5.2 N	6-5	11:10 AM	Clear	78	8-12 S	Rise	NW	Dawn, 6-6
7	M	5.2 S	6-21	6:30 AM	Cloudy	61	0-1	Fall	S	Dawn, 6-23
* 8	F	6.0 N	6-2	12:10 PM	Clear	62	13-18 W	Fall	NW	No return
9	M	7.0 N	7-9	3:00 PM	Cloudy	60	13-18 S	Fall	N	No return
10	M	9.0 E	7-8	8:00 PM	Cloudy	54	4-7 W	Fall	W	No return
11	M	10.0 W	7-6	2:30 PM	Pt. Cldy	91	4-7 E		NW	No return
+12	M	12.0 N	5-30	1:10 PM	Pt. Cldy	68	4-7 W		SW	No return
* 13	F	12.0 N	6-2	11:45 AM	Clear	65	13-18 NW	Rise	SW	4 PM, 5-30
14	M	12.0 N	6-12	7:30 PM	Clear	60	1-3 SW	Rise	SW	No return
15	M	15.0 N	7-18	2:00 PM	Clear	95	0-1		S	Dawn, 6-16
16	M	15.0 S	7-23	7:30 PM	Clear	75	0-1	Rise	NW	2 PM, 7-19
17	M	19.0 S	7-4	8:30 PM	Cloudy	77	4-7 SW	Fall	NW	No return
18	M	19.0 S	7-4	8:30 PM	Cloudy	77	4-7 SE	Fall	NW	No return
19	M	20.0 W	7-18	2:00 PM	Clear	90	13-18 S	Fall	S	No return
20	M	24.0 E	5-31	11:00 AM	Clear	62	8-12 N	Rise	SW	Dawn, 6-1
21	M	24.0 S	5-31	2:30 PM	Clear	68	8-12 N	Rise	S	No return
22	F	24.0 E	6-1	2:45 PM	Cloudy	62	9-12 W	Fall	W	2 PM, 6-14
23	M	35.0 E	7-16	8:45 AM	Pt. Cldy	75	4-7 S	Fall	N	No return
24	M	40.0 E	7-2	2:45 PM	Clear	88	0-1		NW	No return
+25	M	40.0 W	7-3	12:15 PM	Pt. Cldy	85	4-7 S	Rise	SW	10 AM, 7-11
26	M	45.0 S	7-21	9:00 AM	Clear	72	4-7 S		S	No return
27	M	45.0 NE	7-18	7:45 PM	Clear	85	8-12 W		NW	No return
28	M	50.0 N	7-4	8:00 PM	Clear	60	0-1	Fall	S	No return

* Taken from eggs.

+ Same bird. Used for No. 12 and 25

from the nest site for the length of a homing trial would have caused the eggs to become chilled.

The directions birds vanished from the sight of the observer, or its initial flight direction, was recorded; this had little bearing upon whether they returned to the nest or not, as correlation ranged from a high positive in the north to a high negative in the south. Birds were released in each compass direction and some semi-compass directions, and homed equally well from each direction.

The stage of the nesting cycle seemed to be an important factor, as no female returned when taken from eggs.

Homing from various habitats seemed to be no barrier as birds homed from town, country, forest and prairie.

Weather had a marked influence on homing success of Robins. The best homing conditions were found to be when an anticyclone prevailed over the area. Cyclones and unsettled weather seemingly interfered with homing success.

As the birds were released farther from home, the percentage of return decreased. Below 6 miles most of the birds (86.7 percent) returned; from 7 to 25 miles, 52 percent of the birds returned and from over 25 miles, 15.4 percent had successful flights.

ACKNOWLEDGEMENTS

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The Foray Idea

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DAVENPORT

At the last spring meeting in Cedar Rapids the Foray idea was put forth. At that time the principles were mentioned and the promise of an article fully explaining the idea was made.

The idea is hardly new with the author. In West Virginia the first Foray was held in 1940 and the original weekend outing is now two weeks of well organized activities sponsored by the Brooks Bird Club. Tennessee had its first Foray in 1971, held over the Memorial Day weekend at a state park near Knoxville. Other states may well have a similar activity and the purposes are certainly significant. The chief purpose is to record as much information as possible about the birds of a little known region of the state. This necessitates ecological work to fully document the bird data. It is advisable to cover the area at periodic intervals such as five or ten years.

The program provides for participants to become well acquainted with each other and work under the leadership of experts to develop their own skills. Among the specific types of work which could be included are: general area survey including soil types, topography, climatic conditions and land utilization; annotated lists of birds, mammals, reptiles and amphibians, fish, insects, flowering plants, mosses and trees; breeding bird plot and route censuses; nest location and studies; banding project; and keying on a species for life history details.

The territory covered would depend upon the number of people participating. It could be one township or several, a section of territory between certain highways or some region of ecological uniformity. In West Virginia the area of 700 sq. miles is about an average Foray territory. Several regions of Iowa stand out in their challenging aspects, these being noted on the accompanying map. The area should be chosen with the camper in mind as this is probably the most convenient method of ensuring group participation. Motels should be near enough for those who prefer this accommodation. Many times YMCA, Boy or Girl Scout or Church Camps can be utilized.

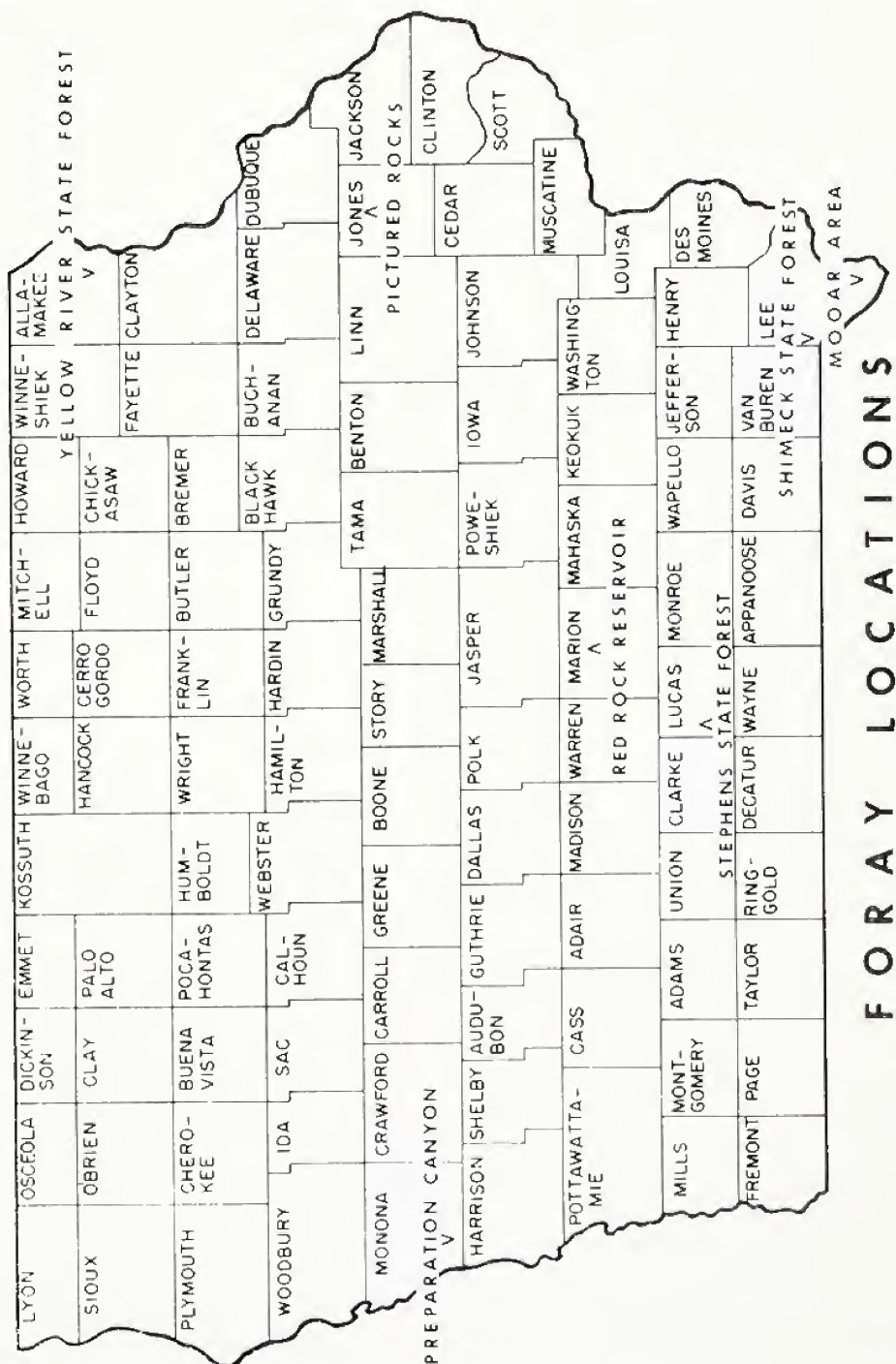
Choice of date is extremely important since the breeding season is also vacation time for most. Probably the first weekend in June would be best. This is still during the school period and is after migration for the avoidance of conflict for banders.

Doubtless there will be no problem securing the necessary experts in the area of ornithology. However, a botanist is also very necessary and other persons with strong backgrounds in the other natural sciences would help greatly. Perhaps co-sponsorship with the Iowa Academy of Science would be in order.

I hope you will write me your thought about this idea both pro and con. It is a program which would take a great deal of planning to carry out successfully but could provide great benefits not only to the union but to scientific knowledge and the overall enjoyment of every participant.

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The Redstart Volume 30, No. 1 and 2, 1963, Volume 31, No. 1 and 3, 1964, Volume 32, No. 2, 1965, Volume 33, No. 1 and 2, 1966, Volume 34, No. 1, 1967, Volume 35, No. 1, 1968, Volume 36, No. 1, 1969, Volume 37, No. 1970, Volume 38, No. 1, 1971.



CONVENTION



At noon on Saturday, September 18, 1971, the Executive Council of the Iowa Ornithologists Union met at the Mark Twain Restaurant, Savanna, Illinois. The idea of having a Foray someplace in Iowa next summer was discussed. An article detailing this appears elsewhere in this issue and it is hoped by the council that the members will express their views to the editor to give an idea of their feelings. Also discussed was the result of the work of the committee on the library appointed at the spring meeting. A list of the books and journals which the committee felt were of too little value to allow for their space requirements is printed elsewhere in this issue along with prices. If you wish any of these please contact the librarian. Some materials are being offered free to the members on a first come, first serve basis and will be at the Waterloo convention. All material pertaining to the Union and directly to Iowa ornithology is being retained. The final item of business was the discussion of the dates for the spring meeting. The frequently used second weekend of May, Mother's Day weekend, conflicts with the Illinois Audubon Diamond Anniversary meeting at Springfield. Since the birding is frequently better later in the month, especially in the case of a late season, Mr. Osness is attempting to locate a suitable place for the banquet on the weekend of May 19-21. The original site, the Ramada Inn, is not available on that weekend, but since Waterloo is such a large city he will doubtless be able to find a satisfactory location. The Museum of History and Science will serve as headquarters. Confirmation of the above dates will appear in the December issue.

After an afternoon field trip at Mississippi Palisades State Park everyone gathered at the beautiful Methodist Church for a fine banquet. Thanks go to Elda Goodmiller and the other local ladies who handled the table decorating and also the registration table. This was followed by a stimulating panel discussion moderated by Elton Fawks, East Moline, concerning the nuclear power plant located just downstream from Clinton on the Mississippi River. The panel began with a presentation by Dr. S. C. Jain of the Hydrology Laboratory, University of Iowa, Iowa City, who explained the results of tests being conducted using a 26 foot by 28 foot model of the effected section of the river showing that the construction complies with the various government agencies. He was followed by Karl Schaefer of Iowa-Illinois Gas and Electric Company, Davenport, who presented a summary of the steps taken by the company to insure the maximum environmental protection at the most reasonable cost for the electric customer. Next speaker was Ken Smith of the Izaak Walton League, Moline, who stated the opposition of conservationists to the present plans for diffuser pipes to return the water to the river based on their thermal pollution effects. Unfortunately while he used more than twice his allocated time he failed to present either facts or convincing arguments in favor of his position. The concluding speaker was W. M. Lonnecker, Bettendorf, a well known wildlife photographer, who showed a series of infrared photographs of the river at the plant location as it looks before completion taken to provide a research tool to determine the effects of the thermal pollution. He also presented a

fine summation for the general considerations of the panel's topic. Following the panel slides of members were shown depicting what they had been doing and seeing in the past year.

Dawn on Sunday, September 19, found everyone trying to keep warm on a rainy morning. A good breakfast was enjoyed at Mississippi Palisades State Park. Due to the poor light conditions and precipitation the hiking trip in the park was cancelled. One trip departed for Lock 13 and the Thomson area led by Elton Fawks, another to the Spring Valley area led by Peter Petersen and the third to Spring Lake Refuge led by John Jachino, Park Naturalist, Mississippi Palisades State Park and Jay Bellinger, Unit Manager, Upper Mississippi National Wildlife Refuge.

All were glad to get inside for a hot luncheon at Bug Tussle Ranch where they ate in shifts to be able to remain inside thanks to Mrs. Walter Peasley's generosity. Since there was not room for all inside the compilation was accomplished by checking with some observers from each field trip. No doubt a few birds will be missing from this list, especially for Saturday and anyone having seen additional birds is urged to advise the editor so that they can be included in the December issue. --Peter C. Petersen, Secretary Pro-Tem, Davenport.

Birds recorded Sunday, September 19, 1971:

Pied-billed Grebe, Double-crested Cormorant, Great Blue Heron, Green Heron, Common Egret, Canada Goose, Mallard, Black Duck, Gadwall, Pintail, Green-winged Teal, Blue-winged Teal, Shoveler, Wood Duck, Ruddy Duck, Sharp-shinned Hawk, Red-tailed Hawk, Broad-winged Hawk, Marsh Hawk, Osprey, Peregrine Falcon, Sparrow Hawk, Ring-necked Pheasant, Sora, American Coot, Killdeer, Common Snipe, Spotted Sandpiper, Greater Yellow-legs, Lesser Yellow-legs, Pectoral Sandpiper, Baird's Sandpiper, Dowitcher (sp.), Stilt Sandpiper, Semipalmated Sandpiper, Northern Phalarope, Herring Gull, Ring-billed Gull, Caspian Tern, Mourning Dove, Common Nighthawk, Chimney Swift, Ruby-throated Hummingbird, Belted Kingfisher, Yellow-shafted Flicker, Red-bellied Woodpecker, Red-headed Woodpecker, Yellow-bellied Sapsucker, Hairy Woodpecker, Downy Woodpecker, Eastern Kingbird, Least Flycatcher, Horned Lark, Tree Swallow (thousands), Bank Swallow, Rough-winged Swallow, Barn Swallow, Cliff Swallow, Purple Martin, Blue Jay, Common Crow, Black-capped Chickadee, White-breasted Nuthatch, House Wren, Marsh Wren (sp.), Catbird, Brown Thrasher, Robin, Eastern Bluebird, Ruby-crowned Kinglet, Cedar Waxwing, Starling, Black-and-white Warbler, Tennessee Warbler, Nashville Warbler, Myrtle Warbler, Black-throated Green Warbler, Chestnut-sided Warbler, Ovenbird, Northern Waterthrush, Yellowthroat, American Redstart, House Sparrow, Eastern Meadowlark, Red-winged Blackbird, Common Grackle, Brown-headed Cowbird, Cardinal, Rose-breasted Grosbeak, Indigo Bunting, American Goldfinch, Rufous-sided Towhee, Savannah Sparrow, Grasshopper Sparrow, Vesper Sparrow, Field Sparrow, White-throated Sparrow, Lincoln's Sparrow, Swamp Sparrow and Song Sparrow. Total species -- 100.

Additional species seen Saturday, September 18, 1971 - Cooper's Hawk, Red-shouldered Hawk, Swainson's Hawk, Whip-poor-will and Eastern Wood Pewee.

REGISTRATION:

AMES: James Rod, Judy Totemeier.

BETTENDORF: Mr. and Mrs. W. M. Lonnecker.

CEDAR FALLS: Berneda Collins, Mrs. Charles Schwanke, Maxine Schwanke.

CEDAR RAPIDS: Mr. and Mrs. Beryl Layton, Sara Millikin, Lillian Ser-

bousek.

DAVENPORT: Mr. and Mrs. Peter C. Petersen, Karl Schaefer.

DES MOINES: Mr. and Mrs. Woodward Brown, Mr. and Mrs. Richard Mooney.

DUBUQUE: Mr. and Mrs. George Crossley, Patricia Heidenreich.

IOWA CITY: Mr. and Mrs. Everett D. Alton, Margrieta Delle, Dr. S. C. Jain, Cora Pollack.

MARION: Lucile Liljedahl.

MARSHALLTOWN: Mr. and Mrs. Clifford Glasgow, Mr. and Mrs. Ed Savage.

OSKALOOSA: Mr. and Mrs. Keith D. Layton.

OTTUMWA: Judge and Mrs. Charles Ayres, Blossom H. Hallberg, Leona L. Havens.

SHENANDOAH: Mr. and Mrs. Emmett Zollars.

WATERLOO: Antoinette Camarata, Ruth C. Halliday, Mabelle Hinkley, John Osness.

DOVER, ARKANSAS: Mrs. Myrle Jones and sister.

ALPHA, ILLINOIS: Frances B. Johnson

EAST MOLINE, ILLINOIS: Mr. and Mrs. Elton Fawks, Ken Smith.

MOLINE, ILLINOIS: David Rader.

PORT BYRON, ILLINOIS: Ralph Mooney.

ROCK ISLAND, ILLINOIS: Marcella Campbell, Edward and Patrick Schroeder, Mr. and Mrs. Warren Wickstrom.

LA MOILLE, MINNESOTA: Violet Nagle, Pauline Wershofen.

Total 58 plus 96 Illinois Audubon Society member -- grand total 154.

EXCESS LIBRARY MATERIALS

Bird-lore Magazine: (6 copies a year).

Price - to 1910 - \$5.00 per year; 1911 on - \$4.00 per year.

Start: Feb. 1899, Vol. 1, No. 1.

End: Nov. - Dec. 1932, Vol. 34, No. 6.

The above are complete runs but lacking: (Jan. - Feb. 1913), Vol. 15, No. 1 and (1927 - all year), Vol. 29, No. 1, 2, 3, 4, 5 and 6.

Extras. - From 1899-1931, inquire. - 50 cents each.

Journal of the American Museum of Natural History. Price - \$5.00 per year.

Vol. 23, No. 3 - May-June 1923.

Vol. 30 - complete.

Vol. 31, No. 1, 2, 3, 5, 6 - missing July - Aug. No. 4.

Vol. 32-34 - complete.

(Start Sept. 1934, published once a month)

Vol. 35-37, complete.

Vol. 38, No. 2, 5 - Sept. (No. 2) & Dec. (No. 5).

Vol. 40, start larger magazine - Sept.,

Oct., Nov. 1937.

Vol. 42, 1938 - May, Nov., Dec.

Vol. 43, 1939 - Jan. thru May.

Vol. 44, 1939 - June, Sept., Dec.

Vol. 45, 1940 - Jan., Feb., March, May.

Vol. 46, 1940 - Sept., Oct., Nov.

Vol. 47, 1941 - Jan., March, May.

Vol. 48, 1941 - Sept., Oct., Nov.

Vol. 49, 1942 - Jan., Feb., May.

Vol. 50, 1942 - June, Sept., Oct., Dec.

Vol. 51, 1943 - Feb., April, May.

Vol. 52, 1943 - June, Sept., Nov., Dec.

Change to 10 issues a year volume.

Vol. 53, 1944 - Jan. thru June & Dec.

Vol. 54, 1945 - complete except for April (No. 4).

Vol. 55, 1946 - complete except for April (No. 4).

Vol. 56 - complete 10 issues.

Vol. 57, 1948 - complete except for April & Oct.

Vol. 58, 1949 - complete except for Feb. & March (No. 2 & 3).

Vol. 59, 1950 - complete except for Feb. & April.

Vol. 60, 1951 - complete except for Jan. & May.

Vol. 61, 1952 - complete except for Oct. & Nov.

Vol. 63, 1953 - Jan., Apr., May, June, Sept., Oct., Nov., Dec.

1 duplicate: Vol. 36, Sept. 1935.

Vol. 64, 1954 - complete except for July, Aug.

Vol. 65, 1955 - Jan., Feb., March, April, May, June, Oct., Dec.

Vol. 66, 1956 - Jan., Mar., Sept., Oct., Nov., Dec.

The Auk - Quarterly Journal, published Jan., April, July, October. Price - \$7.50 per year, singles - \$2.00.

Complete years: 1913, 1914, 1916.

Single copies of: April 1957, April 1958, July 1958, Oct. 1958.

The Condor - 6 publications a year. Price - \$5.00 per year, singles - \$1.00.

Vol. 2, No. 5 - Sept., Oct. 1900.

Vol. 3, No. 4 - July, Aug. 1901.

Vol. 11, No. 1 - 1909.

Vol. 13, No. 1 & 6 - 1911.

Vol. 17, No. 5 - 1915.

Vol. 24 thru Vol. 27.

Vol. 37, No. 3 - 1935.

Vol. 39 thru Vol. 41.

Vol. 42, No. 1, 2, 3, 4 - 1940.

Vol. 50, No. 5 & 6 - 1948.

Vol. 52, No. 2 - 1950.

Vol. 55, No. 2 - 1953.

Vol. 60, No. 1 - 1958.

The Audubon Magazine - 6 publications a year. Price - \$3.50 per year, singles - 60 cents.

Vol. 2, No. 1 & 2 - 1888 - a different publication; Forest & Stream.

Nov. - Dec. - 1944, 2 copies.

Nov. - Dec. - 1946.

May-June - 1947.

Complete years - 6 issues, 1948-1952.

The Indiana Audubon Bulletin - one copy a year. Price - 50 cents each. 1921, 1924, 1926, 1927, 1928-29, 1930.

The Indiana Audubon Society Year Book - Same as above - name

change. Price - 50 cents each.

1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940.

Roosevelt Wild Life Bulletin. Price - \$1 each.

Vol. 1, No. 1 - Dec. 1921.

Vol. 1, No. 2 - Aug. 1922.

Vol. 1, No. 3 - March 1923.

Vol. 1, No. 4 - March 1923.

Vol. 2, No. 1 - Oct. 1923.

Vol. 2, No. 2, 3 - Feb. & March 1924.

Vol. 2, No. 4 - Feb. 1925.

Vol. 3, No. 2, 3, 4 - March 1925; Sept. & Oct. 1926.

Vol. 4, No. 2, 3, 4 - June, July, July 1927.

Vol. 5, No. 2, 3, 4 - Feb., Sept. 1929; Aug. 1930.

Vol. 6, No. 1, 2, 3, 4 - Mar. 1931; Oct. 1933; July 1935; Jan. 1937.

Vol. 7, No. 1, 2, 3, 4 - Oct. 1937; Oct. 1939; Nov. 1940; Sept. 1941.

The American Midland Naturalist. Price - \$4.00 per volume.

Vol. 24 thru Vol. 31, complete - 1940-1944.

Roosevelt Wild Life Annals. Price - 50 cents.

Vol. 9, No. 2 - May 1936.

Birds of North and Middle America. Price - \$5.00 each.

Ridgway and Friedman, Part 9 & 10, Bulletin 50, United States National Museum - Washington 1941 & 1946.

The Blue Jay - published quarterly by The Saskatchewan Natural History Society. Price - \$3.00 per volume. Vol. 15 & 16 complete.

Vol. 17, No. 1, 2 - March & June 1959.

The Audubon Bulletin - published quarterly by the Illinois Audubon Society. Price \$2.00 per volume, 50 cents per copy.

No. 46, June 1943.

No. 74 - June 1950.

No. 75 - Sept. 1950.

No. 76 - Dec. 1950.

No. 77 thru 80 - 1951 complete year.

No. 82 thru 84 - 1952 June, Sept., Dec.
No. 85 thru 108 - Complete years of
1953 thru 1958.

No. 109 - March 1959.

No. 110 - June 1959.

Duplicates: No. 74 - June 1950. No. 105
- March 1958.

The Birds of Isla Coiba, Panama.
Price - \$1.50 - by Alexander Wet-
more. Published by the Smithsonian
Institution, July 8, 1957.

**A History of Certain Great Horned
Owls.** Price - 75 cents. - by Charles
R. Keyes. From the Smithsonian
Report for 1911, Pages 395-405.

**A New Subspecies of Crossbill from
Newfoundland.** Price - 50 cents. by
A. C. Bent, Smithsonian
Miscellaneous Collections, Vol. 60
No. 15.

**The Adaptive Modifications and the
Taxonomic Value of the Tongue in
Birds.** Price - \$1.50. by Leon L.
Gardner. No. 2591 - From the
Proceedings of the U. S. National
Museum, Vol. 67, Art. 19, pp 1-49,
with pls. 1-16.

**Generic Names Applied to Birds
During the Years 1916 to 1922, In-
clusive, with Additions to
Waterhouse's "Index Generum
Avium".** Price - \$1.00. by Charles W.
Richmond. No. 2664 - From the
Proceedings of the U. S. National
Museum, Vol. 70, Art. 15, pp. 1-44.

The Pine Siskin Breeding in Iowa.
Price - 50 cents. - by W. J. Hayward
and T. C. Stephens, Reprinted from
Wilson Bulletin.

The Rejoinder. 14 copies. Price - 25
cents each. - by T. C. Stephens,
Reprinted from the *Wilson Bulletin*.

The Prothonotary Warbler at Lake

Okoboji, Iowa. Price - 50 cents. - by
T. C. Stephens - Reprinted from
Wilson Bulletin.

The Osprey, bound. Price - \$7.50.
Volume III and IV - Sept. 1898 to June
1899, (inclusive), Sept. 1899 to July,
Aug. 1900 (inclusive).

The Redstart. Price - \$3.00 per year.
Brooks Bird Club - Wheeling, West
Virginia.

Vol. XI, No. 12 - September 1944.

Vol. XII, No. 1 & 2 - October-
November 1944.

No. 7 & 8 - April-May 1945.

No. 9 - June 1945.

No. 10 - July 1945.

No. 11 - August 1945.

Vol. XIII complete - October 1945-
Sept. 1946.

Vol. XIV, No. 4 & 5 - January-
February 1947.

No. 6 - March 1947.

No. 7 - April 1947.

No. 11 & 12 - August-September 1947.

Vol. XV, No. 1 - October 1947.

No. 2 & 3 - November-December 1947.

No. 5 & 6 - February-March 1948.

No. 7 - April 1948.

No. 8 & 9 - May-June 1948.

No. 11 & 12 - August-September 1948.

Vol. XVI, No. 2 - March 1949.

No. 3 - June 1949.

Vol. XVIII thru Vol. XXIII, No. 4 are
complete runs. During these years
there were 4 issues a year: start
Dec. 1949 (Vol. XVII, No. 1), then
No. 2, March 1950; No. 3, June 1950;
No. 4, Sept. 1950; Vol. XVIII, No. 1
was Dec. 1950 etc.)

Vol. XXIV, No. 1 - December 1956.

No. 2 - March 1957.

No. 3 - June 1957.

Vol. XXV, No. 1 - December 1957.

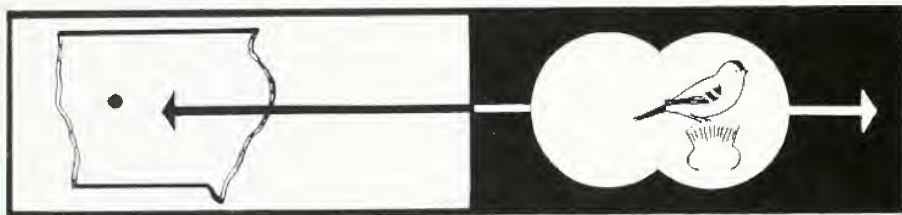
No. 3 - June 1958.

No. 4 - September 1958.

Vol. XXVI, No. 1 - December 1958.

No. 2 - March 1958.

If interested, contact the Librarian, Mrs. Patricia Layton. Additional material
including *The Wilson Bulletin* will be listed in the December issue when it is
catalogued.



Birding Areas of Iowa

Jefferson-Greene County

JOHN FAABORG
Dept. of Biology
Princeton University
PRINCETON, NEW JERSEY

Jefferson 1970 population: 4,735
Area covered by this report 600 square miles (appr.)

Situated in the rich agricultural region of west-central Iowa, Greene County is not exactly a birder's paradise. What 100 years ago was a beautiful region of prairie and potholes is now an endless sea of corn and soybean fields. Lush woodlands which originally bordered the streams and rivers of the area have suffered either from unwise cultivation or grazing and over-grazing by cattle. Goose Lake, the area's fine marsh, remains only because attempts to drain it failed. In the whole county, the author knows of no area that hasn't been plowed, grazed, drained, trampled, or misused at least once.

Nevertheless, there are many birds in Greene County. The author has seen slightly less than 250 species in the last fifteen years. Although the woodlands of the area are sparse when compared to those of the bigger rivers to the east, they do support many birds, warblers included. In Goose Lake and Dunbar Slough we have two marshland habitats without which a summary of Iowa birding areas would not be complete.

Deciduous woodland areas

The deciduous woodland areas are all either associated with water areas or human dwellings. Of the more natural woodlands, most are found along the Raccoon River, which runs diagonally across the county and goes through Jefferson, the county seat. A number of roads run through these woodlands and provide excellent birding from the car. The following areas are publicly owned segments of river valley and woodland that are readily accessible to the birder.

Kelso Park - This small area of woodland and brush is located one block west of the swimming pool in southwest Jefferson. Although operated as a wildflower preserve, the park has many birds that can be observed easily along the many paths. Associated woodlands on the bluffs bordering the Raccoon River also offer good birding, but these are gradually being cleared and developed. Warblers and sparrows are best seen here, with sparrows particularly abundant in the fall.

Henderson Park - This county operated park is situated on the Raccoon River just south of Jefferson on highway 4. In addition to access to the river, it has a large stand of bottomland timber.

Squirrel Hollow Park - By following the north side of the Raccoon River south and east from Jefferson for six miles, one will come to Squirrel Hollow Park. Consisting of wooded ravines and bluffs, the park offers excellent birding at all times of year. The trip from Jefferson offers excellent from-the-car birding as it passes grassy fields, scrubby pastures, and several wooded creek bottoms.

Seven-Hills Park - This county park is situated two miles southwest of Jefferson. It consists mainly of more or less typical wooded ravines and uplands and is good for an assortment of passerines. A very productive brome grass field on the north side of the park adds a great many species to the area's list.

McCord Access - An area of river and river bottom woodlands recently acquired by the state, McCord Access runs for several miles along the Raccoon River west of Jefferson. It can be most easily reached where it crosses highway 30.

Marshes, Mudflats, and Wet Meadows

It is the marsh and marsh-related habitats that have made Greene County of interest and importance to Iowa ornithology. The last movements of the Wisconsin glacier (which covered much of Greene County) left much of the upper Great Plains dotted with small marshes and potholes. Of the thousands of marshes originally in Greene County, only two remain and these are among the most southerly of the remaining glacial marshes of the state. As such they are important in looking at the present ranges of waterfowl and other marsh birds.

Goose Lake - Located five miles north and one west of Jefferson, Goose Lake's approximately 400 acres of marsh and 100 acres of adjoining grass and woodland form one of the best birding area in the state. An attempt was made to drain this area in the 1920's (as can be seen from the remnants of a woodlot planted across the lake bed), but fortunately this failed and the lake was fully restored in the 1950's.

A gravel road runs along a portion of the lake shore and in the spring most of the lake can be observed from here. This is particularly true if one uses a good telescope. By walking along this road and making a certain amount of noise, one often can flush rails and bitterns, particularly from the northeast side of the lake. To see certain other species, it is best to follow the many paths that follow the edge of the marsh. In early summer a canoe trip is most enjoyable, as one can get a first-hand look at the many nesting marsh birds.

Among the birds that nest with some regularity at Goose Lake are Pied-billed Grebe, Green Heron, Least Bittern, American Bittern, Blue-winged Teal, Mallard, Wood Duck, Redhead, Ruddy Duck, Virginia Rail, Sora, Common Gallinule, Long-billed Marsh Wren, and Yellow-headed Blackbird. For many years a large Black-crowned Night Heron colony frequented the trees that run across the lake.

Many interesting migrants or visitors have been seen here at all seasons of the year. Among these are White Pelican, White-faced Ibis, Little Blue Heron, Peregrine Falcon, Caspian Tern, Snowy Owl, and LeConte's Sparrow.

Because it supports such lush marsh plants as cattails and bullrush, Goose Lake usually has little mudflat and thus few shorebirds. In the spring of 1967,

though, the marsh was drained to allow the germination of marsh plants. The resulting mudflats attracted thousands of shorebirds, including Piping Plover, Willet, Marbled and Hudsonian Godwit, and Knot.

Goose Lake also has some woodlands which have proven productive in the past. Common nesters in the shrubs and trees surrounding the lake include Traill's Flycatcher, Bell's Vireo, and Swamp Sparrow. A large pine planting to the north of the lake will almost always produce an owl of some sort (either Horned, Barred, Long-eared, or Short-eared) and has also revealed numerous winter species such as Common Redpoll and Red Crossbill.

As can be seen, the Goose Lake area supports a great amount of bird life, ranging from grebes to Snow Buntings. The author can list nearly two hundred species from this area alone. Perhaps as enjoyable as the variety of birdlife at Goose Lake is the quantity. In March and April thousands of ducks and geese rest and feed in the area. During early summer the area teams with such nesting species as hundreds of Yellow-headed Blackbirds, while Traill's Flycatcher, Yellow Warbler, Yellowthroats, and Song Sparrow abound. In August and September hordes of swallows and blackbirds use the marsh as a roosting area, while at this same time thousands of teal rest here on their early migration south. Unfortunately, the marsh should be avoided during the duck hunting season, as at that time only the hunters are present in any numbers. At any other time of the year the great diversity of habitat and the high quality of cover make this one of the best individual birding area in the state.

Finn Pond - Recently purchased by the State Conservation Commission, Finn Pond is a small glacial marsh situated two miles west of Jefferson on hiway 30. In structure and birdlife it is like a miniature Goose Lake, boasting nearly all the varieties of the latter but not having anywhere near the quantity. This area is often of best use in late summer and early fall when many ducks and shorebirds can be seen easily from the shoulder of the hiway.

Dunbar Slough - Dunbar Slough can be found by going south from Scranton on highway 25 and turning west at either of the first three roads. The first road will pass the north end of the area, leading you to a large area of wet meadow with nesting Short-billed Marsh Wren and Sora, and also an area of drier grassland with nesting Upland Plover and Savannah Sparrow. A Cattle Egret was seen here in May of 1967. Also accessible from this road is a large thicket which houses Traill's Flycatcher, Bell's Vireo, and other passerines.

The second road cuts across the slough. Here you have open water on one side and marsh on the other. For birders who don't like to get their feet wet this is a good spot, as you can walk on the pavement and see all sorts of marsh birds. In dry years this area often provides good shorebirding in late summer and makes the use of a telescope very easy. The area on the north side of this road is a wildlife refuge and is closed to hunting and trespassing during the duck hunting season. As a result, it is one of the few areas where ducks can be seen in fall.

By taking the third road west one goes three miles west then turns north for one-half mile. On the way here there are several small roadside ponds that are often productive and the large meadow where you turn to go to the slough often has plovers, snipe, rails, and a few ducks. On approaching the area from the south one goes over a small hill that gives a commanding view of the whole marsh and water complex.

Although an area of water and marsh, Dunbar Slough differs from the

previous areas discussed. Its 600 acres are spread over two and one-half miles. Generally it has much open water and the marsh consists of just a border of cat-tails. Being a slough it is more subject to variable water levels, a fact which when coupled with continuing attempts by the state to drain the area to induce plant growth, often exposes large area of mudflat.

As a result of the above conditions, few water birds nest at Dunbar Slough. Yet, during migration it often serves as a resting area for large numbers of ducks, geese, gulls, and terns. The White Pelican has been seen here often, along with cormorants and assorted grebes. When mudflats are exposed there are many shorebirds, including such species as Golden Plover, Stilt Sandpiper, Sanderling, Avocet, and Northern Phalarope.

As can be seen, Dunbar Slough has little of the great diversity of the Goose Lake area in terms of total birds seen. But it is an excellent area to observe migrating water birds, and on occasion this area attracts them in enormous numbers. This area also is good for the typical birding enthusiast in that it is easily accessible and much can be seen from close to the car.

Pine Groves

The only pine groves in Greene County are quite small and rather scattered. The largest one, at Goose Lake, has already been mentioned. The Jefferson Cemetery, on the east side of Jefferson, has many large pine and on occasion has produced Red-breasted Nuthatches, Red Crossbills, and other winter birds. A number of farms have coniferous plantings which may on occasion produce something of interest in the wintertime.

Artificial Lakes

Spring Lake, located four miles east and two miles north of Jefferson, is the only artificial body of water of any size in the county. Although the woodlands around it support many birds, the lake itself is of no special interest outside of a few scattered observations of ducks and terns.

Grassland

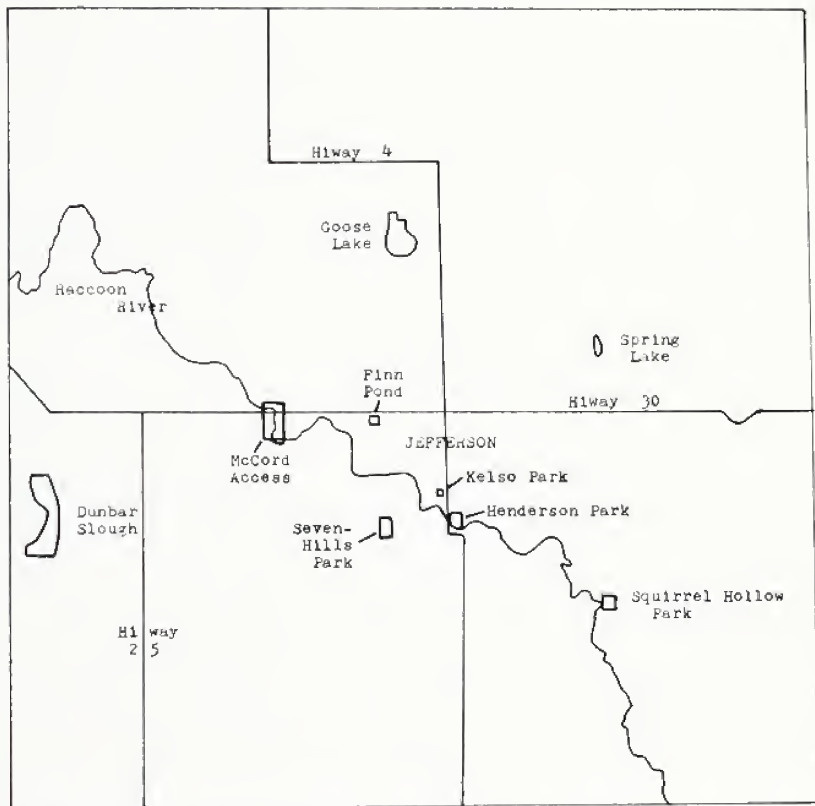
Much of Greene County is covered with grassland, but unfortunately for the birder most of this is the grass we know as corn. Fallow fields or pastures are quite productive where they can be found, but in most of the county cultivation is the rule.

An exception to the general terrain of Greene County occurs in its southwest corner. Here the Wisconsin glacier left a rolling, rocky landscape that is highly unsuitable for farming. By going south from Dunbar Slough for a few miles one finds this region of rolling, grass covered hills and meandering streams. Among the birds found here are Sparrow Hawk, Upland Plover, colonies of Cliff Swallow, nesting Savannah Sparrow, and an occasional Western Kingbird. Willow Creek flows through this area and, when it happens to flood in early spring, provides a resting spot for thousands of waterfowl.

Further Suggestions

The obvious strong points of Greene County birding revolve around its marshes and marsh habitats. If one is after a large list it should be noted that Ledges State Park is only about 35 miles from Goose Lake. This park provides excellent woodland habitat and a great diversity of bird species. (Note the article by Jim Rod on this area, *J.B.L.* Vol. 41 P. 46.) The author can list well over 100 species of birds that have been known to breed recently in the Ledges, Goose Lake, and

Dunbar Slough areas. Thus, although Greene County has a weakness in its woodlands, this can be easily remedied by a short trip eastward. On the other hand, Greene County is well worth the trip if you want to see marsh related birds.



Rough map of Greene County showing general locations of major birding areas.

FIELD REPORTS

Akron	Wallingford	Mason City	Marble Rock
Webster City	Grinnell	Cedar Falls	
Jefferson		Waterloo	
Sioux City		Cedar Rapids	
Ogden	Ames	Davenport	
Des Moines		Iowa City	
Indianola			
Essex	Shenandoah	Pleasantville	
Hamburg	Lamoni	Oskaloosa	

May was cool, with rains in the second and third weeks, the last accompanied by heavy winds. June was the warmest in 37 years according to the Des Moines Weather Bureau. Heavy rains fell during the middle and end of the month. July was the coolest in 13 years with new lows recorded and scattered frosts recorded. Rainfall was only two-thirds of normal. August was cool in the early part, warming later, but was the driest ever.

Summer usually is the least interesting of the seasons to most birders, and many of the reports just received refer to migratory movements rather than summer observations. Comments on the current migration or fall season properly belong in the December issue, and should be resubmitted not later than 20 November.

Grebes, Pelicans. Pied-bills have been fewer (DK). Summer records of White Pelicans have been few, but there are these observations: Eagle Lake on 19 July (EB), over Clear Lake on 1 July seen by Mark S. Boyce with Ed Boggess and Richard Bishop, and at Blue Lake on 25 July (DH).

Hérons. Ten pairs of Great Blues nested successfully at Red Rock Refuge (GB). They were thought fewer in most areas (DH), but all other comments were favorable. Little Blue Herons. On 10 August there were 4 seen in the Colyn Game Area in Lucas Co. (ODK). Cattle Egrets were seen at Hendrickson late in April by Steve Hanselman (fide MW), and 3 on 31 May north of Spirit Lake (RTR). Common Egrets, numerous at Lake Rathbun (CS), but down at Credit Island where the maximum seen was 6 (PP). Four were seen in July (EC). There were two dozen Black-crowned in the Rathbun area on 5 September (CS). A Yellow-crowned was seen across the river from Dubuque on 17 May by Ival Schuster and Pauline Ruegnitz while 2 adults and 2 immatures were observed several times during August at Flint Access on the Des Moines River in Polk Co. (MB, DM, WHB). Least Bitterns were seen on 3 June and 31 July at Red Rock (WC) and on 3 August at Big Wall Lake (MEW).

Ducks. Several broods of Mallards have been seen at Red Rock (GB). There have been numerous young Wood Ducks at Red Rock with an estimated 300 seen on 8 September by John Beamer, Refuge Mgr. (GB). The nesting appears to have been generally successful in the Sioux City area (DH) and in Polk Co. A male Lesser Scaup on 14 July on Fisher's Lake may have been the same one present in late spring (WC).

Vultures, Hawks. At least 30 Turkey Vultures summered at the Red Rock bluffs, with more in the Refuge (GB). On 16 August there were 12 seen feeding (DG). A roost at Rathbun had from 150-200 (CS) and about 30 roosted at Ledges (JR), while there were many in Allamakee Co. in the last week in July (RM). Only one pair of Red-tailed was seen in the Refuge while there was no observation elsewhere in the township (GB). Two nests were seen (DG), and they were thought numerous in Allamakee Co. late in July (RM), but they were thought down (PP). Red-shouldered produced one young (EC). Sparrow Hawks were very few in Polk Co. considering the numbers seen in spring, only one was seen all summer (GB), and they were thought down (PP), but in the last week in July there were 6 to the half mile in Allamakee Co. (RM).

Bobwhites, Pheasants, Turkeys. Both Bobwhites and Pheasants appear to have had good nesting seasons. The 20 Turkeys released four years ago in Lucas Forest units have increased until there are from 2-400 in Lucas and Clarke Cos. (PDK).

Plovers, Sandpipers, Killdeers have been numerous in late summer. On 28 June a Woodcock appeared in the middle of Des Moines, another was seen at the Ledges on 2 July (MB, MEW), and observations were made on 17 and 18 July with an immature on 26 July (LS). Upland Plovers were first seen early in May near Polk City (HP), one was seen on 5 June (LS), 3 on 9 June (EC), and they were in usual numbers at Lamoni with a nest and 4 new young on the Dean Ballantyne farm (DG).

Jaegers, Terns. A Parasitic Jaeger in dark phase was seen at Sweet's Marsh

on 15 May (CH). A Least Tern was at Flint Access in Polk Co. on 13 August (MEW, WHB). On 20 July at Harper's Ferry there were 2 Caspian Terns (DK).

Doves, Cuckoos. Doves appeared to be numerous. At Red Rock Refuge 108 were banded (GB). One was sitting on eggs as late as 19 September (DH). Most reporters thought both cuckoos scarce, the exception being at Sioux Center, Geo. Marsh (fide DH).

Owls. There were 4 young Screech Owls in town (EC). Three nests of Great Horned were located (DG). A Long-eared was heard on 16 July after an absence of six months (EC).

Goatsuckers, Swifts, Hummingbirds. A Chuck-will's-widow was seen on 7 May at Shenandoah (JBB) and nests were found in the Ottumwa area at Camp Arrowhead and the Baptist Camp (PW). Chimney Swifts were in increased numbers in July and August (EC). A hummingbird nest with 2 young was found at Moorhead (DH), but they were generally thought few.

Flycatchers. Western Kingbirds were abundant with 15 on 14 July and 12 on 18 July (DH), but they seemed scarce in Sioux C. (RM). Phoebees were fewer (GB). Two Acadian Flycatchers were in Yellow River Forest (DK). No one mentioned Traill's which were scarce in Polk Co.

Swallows. There were 100 Cliff Swallow nests on Painted Rocks, but most of the 71 on Red Rock dam were usurped or broken by House Sparrows (GB). Purple Martins were fewer and missing in some places where they had been regular nesters.

Chickadees, Wrens. The Boreal Chickadee netted by the Diggs' was only 10 miles from the Iowa line in Missouri. It is now a specimen in U. of Kan. Carolina Wrens were found in Jasper Co. (PDK). One was heard intermittently during August, and as late as 24 September from the Griffith residence in Des Moines. (CG). This appears the first record since the winter of '61-'62.

Mimics, Thrushes. Mimics in general were thought fewer (DH). Robins, while not numerous (GB), were abundant (DH). Veeries were seen and heard at the Ledges during the summer. Bluebirds were scarce (GB).

Gnatcatchers, Shrikes. Blue-gray Gnatcatcher nested in Yellow River Forest (DK). At least three pairs of Loggerhead Shrikes nested successfully in the southeast part of the twp. they were few in Polk Co. despite abundance in the spring.

Vireos, Warblers. Few Bell's Vireos were found in the Des Moines area. Red-eyed were few (DH) and again down in Des Moines. Warbling were few in Sioux City, but many nested at Blue Lake (DH). A Worm-eating was seen on 22 May (Hanselman fide JR) while another was netted on 23 May at Davenport, the first netted there (PCP). On 15 May 2 Yellow-throated Warblers were singing at Ledges, and there were subsequent observations (JR). A male was photographed in Stephens Forest in the same area as last year (PDK). The Kentucky Warbler was first found at Ledges (JR) and also found on later dates. Yellow River Forest furnished four records (DK). The Hooded Warbler was discovered singing at the Ledges on 2 July (MB, MEW). A late report tells of a Chat near Des Moines on 8 May (MEP).

Icterids. A pair of Bobolinks was seen through the nesting season at Red Rocks (GB). A singing male was seen 2 July; nestings have taken place in the area in other years (DG). About 25 immatures were seen at Muskrat Slough on 19 August (LS). Baltimore Orioles were fewer (GB), but at least normal numbers in Des Moines. No reports were received for Orchard Orioles. There seemed a population explosion of grackles which were eating young of other species and

consuming the food of the winter birds (DH).

Tanagers, Finches. On 3 July there was one Scarlet Tanager below the Red Rock dam (GB). Summer Tanagers nested in Stephens Forest for the third year (PDK); one successful nest in Des Moines with one young; and one appeared at a bird bath (GDeL). A pair of Blue Grosbeaks was seen on 7 June and twice later in the month at Red Rock (PDK). Indigo Buntings were down (GB), but more than usual (EC). Dickcissels also more than usual (EC). An early White-winged Crossbill was netted on 23 August only 10 miles south of the Iowa line (HD). Lark Buntings were seen twice in Sioux Co. and once in Woodbury Co. in early June (RM). Grasshopper Sparrows continue scarce (DK). Lark Sparrows were scarce in Polk Co. Field Sparrows were fewer at Blue Lake (DH). Song Sparrows were in good numbers (E. Bryant fide DH), but not in Sioux City.

Contributors: Mrs. Gladys Black, Pleasantville; Ed Boggess, Britt; Mark Boyce, Manley; Jean B. Braley, Shenandoah; Mrs. Margaret Brooke, Des Moines; Eldon Bryant, Akron; Esther Copp, Wheatland; Wm. Criswell, Red Rock Ref.; Mrs. Genevieve DeLong, Lamoni; Mrs. Hazel Diggs, Hamburg; Donald Gillaspey, Lamoni; Mrs. Catherine Griffith, Des Moines; Mrs. D. M. Hanna, Sioux City; Mrs. Clarise Hewitt, Jesup; Paul D. Kline, Indianola; Darwin Koenig, Castalia; Ron Muilenburg, Webster City; Mrs. Helen Peasley, Des Moines; Mary Elizabeth Peck, Des Moines; Peter Petersen, Davenport; Mrs. R. T. Repass, Des Moines; Jim Rod, Ames; Mrs. Pauline Ruegnitz, Dubuque; Mrs. Charlotte Scott; Seymour; Pearle Walker, Ottumwa; Milton Weller, Ames; Mary Ellen Warters, Des Moines. Woodward H. Brown, 432 Tonawanda Dr., Apt. 205, Des Moines, Ia. 50312.

GENERAL NOTES



Little Blue Heron in Northeast Iowa -- On April 6, 1971 I was fortunate to see an adult Little Blue Heron near Wexford, a few miles north of Harper's Ferry, Iowa.

When I first saw the bird I was 600-700 feet away, atop a bluff to the north of Wexford Creek. The bird was on the edge of a spring-fed pond south of the creek. From this distance I rather casually identified the bird as a Green Heron.

The second time I saw the bird from about 100 feet. I noted a slate-blue bird larger than a Green Heron (but not as large as a Great Blue Heron) with a neck longer than that of a Green Heron. Before he flew, I was able to note that there was no white on the head, as the Great Blue Heron shows most of the time. From this distance I examined the bird with both 7X35 binoculars and 40X scope. With the scope I noted a light blue bill, darker at the tip.

The third time I saw the bird from about 50 feet, using 7X35 binoculars. I noted some reddish-brown on the neck and head, dark green legs, and a slender white plume extending from the crown of the head down the center of the back of the neck. From this close distance I was able to examine the bird for about five minutes in good sunlight. This bird was in a wooded swamp up to two feet in depth, surrounded on three sides by popple type thicket and on the fourth by a bluff. Vegetation included water-cress and cattails. -- FREDERICK LESHER, 509 Winona St., La Crosse, Wisconsin.

Clemons Bluebird Trail -- The plight of the Eastern Bluebird has long been the concern of the Federated Garden Clubs of Iowa and in April of 1970 The Clemons Garden Club made the decision to participate in the Bluebird Trail Project. The purpose of this state wide project is to provide nesting areas for the Eastern Bluebird. These trails will crisscross Iowa from north to south and east to west.

Our Marshall County Wildlife Club consented to supply our club with twenty bluebird houses. We erected these houses in October, 1970, north from Clemons along the road to north east of Bangor - Marshall County.

On July 22, 1971, we went out to check the bluebird houses for occupancy and found the following: 7 of the houses contained nests, 4 contained wasps, 8 remained vacant and 1 was damaged. Nest material included evergreen twigs, straw, and a variety of grasses. The houses that are vacant and those containing wasps (after they have been removed) will be relocated to more suitable nesting areas. We discovered that even though we proved safe nesting areas that if there was an absence of either food and/or water the birds refused to nest. All three of these requirements of the birds must be met or the birds will not nest.

After the beginning of the Bluebird Trail Project the membership of The Clemons Garden Club became more interested in the birds of the Mississippi Flyway. This sparked interest led to the compiling of individual bird observation lists. The time limit involved was from March, 1971 to May, 1971. Ninety-nine percent of the members turned in observation lists and of these members five observed 30 or more birds. They are Mrs. Charles Innis with 48, Mrs. John Goecke with 54, Mrs. Elmer Goecke, Mrs. Ron Wheeler, and Mrs. Loren Conrad with 30. Most members reported having some type of field guide in their home.

This has been our account of approximately one year's interest and activities with our friends the birds. -- MRS. RONALD WHEATER, President - Clemons Garden Club.

BOOK REVIEWS



Galapagos Islands -- Alfred M. Bailey -- Denver Museum of Natural History Museum Pictorial No. 19 -- 86 p., 51 photographs, 1 map -- 1970 -- paperbound -- \$1.50.

This well illustrated publication presents the narrative of the 1960 field trip of the Denver Museum of Natural History to the Galapagos Islands. The trip covered only a two month period so no detailed scientific work could be accomplished but some interesting finds were made. These included locating the first eggs of the Galapagos Penguin and Dusky Gull to be reported. The book includes a brief description of the islands and a sketch of the previous scientific expeditions. The narrative proceeds on an island to island basis dealing with the life forms as they were encountered.

As usual the Denver Museum of Natural History has produced a fine book for the general naturalist. It is well written and especially well illustrated. The arm-chair traveler and intrepid adventurer alike will find this book a worthwhile investment. -- ed.

Australian Seashores In Colour -- Keith Gilbert and John Yalduyn -- Charles A. Tuttle Co., Rutland, Vermont -- 112 p., 64 color photos and 49 black-and-white photos -- 1969 -- \$5.00.

While not a book which deals with birds this very well illustrated book would be of interest to anyone with natural history interests who was traveling to Australia. Very often a bit of beachcombing or snorkling can be included as a change of pace from birding and it proves quite relaxing. The photos are very fine and illustrate many of the common Australian seashore creatures. It would be a worth-while book to consider from the standpoint of photography alone. -- ed.

Pennsylvania Birds, An Annotated List -- Earl L. Poole -- Delaware Valley Ornithological Club -- Livingston Publishing Co., Wynnewood, Pa. -- 94 p., many line drawings and maps -- 1964 -- \$4.00.

While not a recent release this book has not been reviewed in *Iowa Bird Life* and may be of interest. From the standpoint of information it is similar to Woodward Brown's recent Iowa book. Line drawings by the author, maps indicating breeding locations and the addition of a hard cover increase the price but also make the book more attractive. The introduction covers early bird work done in the state and descriptions of the physiography and faunal zones. The maps, while interesting, use considerable space for their total value. The bibliography covers the most important titles only. It is a well produced book which provides the basic information concerning the status of Pennsylvania birds. -- ed.

The Parrots of Australia -- William R. Eastman, Jr. and Alexander C. Hunt -- Livingston Publishing Co., Wynnewood, Pa. -- 194 p., 16 color illustrations, 16 color photos and 27 black and white photos -- 1966 -- \$12.50.

A very well done book covering the field identification and habits of about sixty species of Australian parrots. Each species is illustrated in color and the text describes its characteristics. Range maps show the presently known range. Similar species are cross referenced in the text. The text is written in a very straightforward manner with the general remarks presented as single sentences, making them easy to scan. While the size of the book is a bit large for field use this does permit each illustration to be closer to life size than is the case for most field guides. The plates are not crowded and depict similar species together. The paper, reproduction and binding are all top quality. -- ed.

Request for Information: Sanderling

During the autumn migration of 1971, the Long Point Bird Observatory hopes to band and colour-mark several hundred Sanderling at Long Point, Ontario. Information on the movement of these birds away from Long Point will facilitate research presently underway on the energy requirements of their migration. We would appreciate it if everyone sighting these birds would report their observations to:

Long Point Bird Observatory,
269 Beta Street,
Toronto 14, Ontario, Canada.

The following information would be appreciated:

Date and time of observation

Location, including nearest city or town

Colours: note -- birds will be coloured on the breast and the abdomen with two of the following colours: red, orange, pink, purple, yellow, green, blue, brown, black and white (no colour).

Leg that has been banded: this will tell if the bird is an adult or an immature.

Any other information on what other birds are with the marked individuals would be very useful.

SHOREBIRD RECAPTURE OPERATION

The objective of this research is to study the migration routes of North American shorebirds in relation to their flight range capabilities.

A field staff has undertaken a marking programme in 1970 on the Atlantic coast (Magdalen Islands and Sable Island) of southbound migrating shorebirds to know the percentage of birds that use an oversea route to the Caribbean and northern South America as compared with those that follow the coast down to Florida before passing to South America.

Shorebirds will be mist-netted and banded with regular bands, from July 10 to October 15 again this year. Each bird will be color marked; we will use feather dyes on the underparts and streamers attached to the leg or to the wing. Birds caught on the Magdalen Islands will be marked YELLOW(dye and streamer), while the ones from Sable Island will bear RED markings. The six last figures of the band number will be written on the streamer; they will be large enough to be read with binoculars or telescope. The flight range capabilities of each individual will be estimated from its fresh weight and other parameters. The same programme will be repeated in 1972.



Type Of Collaboration We Would Appreciate From You:

- Note the band number on the streamer, and report to us the locality, date, color of streamer or dye and species.
- Weigh the bird (when caught alive).
- Report to us any sight records of color marked shorebirds (underparts and streamer, yellow or red).
- Inform us of any person interested in taking an active part in this programme.
- Do not hesitate to communicate with us.

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I certify that the statements made by me above are correct and complete.

PETER PETERSEN, Editor

Save Birds of Prey

SUPPORT H.R. BILL 5821

"A bill to extend to hawks and owls the protection now accorded to bald and golden eagles."

• BILL 5821 would eliminate the use of POLE TRAPS and other predator control devices now used on game farms. Only by special permit from the Secretary of the Interior would persons be allowed use of lethal devices for purposes of predator control.

• BILL 5821 would eliminate SHOOTING by irresponsible sportsmen and ignorant property owners by increasing fines and penalties. Under current laws, individuals caught shooting a protected raptor can claim it was mistaken for a non-protected species.

• BILL 5821 would eliminate HARVESTING of adult and fledgling hawks and owls by breeders, falconers, and pet seekers, and would thereby eliminate much of the nest disturbance that currently exists during the breeding season.

WHAT CAN YOU DO?

SEND LETTERS OR TELEGRAMS TO YOUR CONGRESSMEN URGING THEM TO SUPPORT H.R. BILL 5821. Have friends do likewise. Tell your Congressman that nearly all hawks and owls have declined in recent years and that federal protection is one way to halt some of the causes for declines. The reasons for supporting federal protection listed above may help in the composition of letters. Address letters to: Congressman John Doe, House of Representatives, Washington, D.C. 20515.

Since Congressional support is more unlikely in states where falconry is legal and has a strong following, and where birds of prey are not protected, send additional letters to Congressmen in the states listed below. A state listed in capitals denotes strong support as being vital for passage.

*Alabama	+ Georgia	+ Michigan	+ *Oklahoma
+ *Alaska	+ Idaho	+ *Minnesota	+ PENNSYLVANIA
+ Arizona	+ ILLINOIS	+ Mississippi	+ S. Dakota
+ Arkansas	+ Indiana	+ Missouri	+ Utah
+ CALIFORNIA	‡ *Kansas	‡ *NEBRASKA	+ VIRGINIA
+ COLORADO	+ Kentucky	+ Nevada	+ *WASHINGTON
+ FLORIDA	+ MARYLAND	+ N. Dakota	+ WISCONSIN
			**WYOMING

*One or more raptor species not protected. + Falconry provisions
‡ Bill introduced in 1971 to protect all raptors. **No owls protected

The AMERICAN ORNITHOLOGISTS' UNION lists 54 species of hawks and owls native to North America. Of these, more than 21 species — nearly half of the birds of prey found in the United States — have been recognized as "endangered or rare" by the Bureau of Sport Fisheries and Wildlife. The remaining 33 species of hawks and owls have also declined considerably in recent years. Ask any experienced field naturalist or raptor observer. The facts are that fewer birds of prey are seen each year. When will the list of endangered hawks and owls stop growing? — California condor, Florida Everglade kite, Hawaiian hawk, short-tailed hawk, Southern bald eagle, American peregrine falcon, zone-tailed hawk, gray hawk, black hawk, aplomado falcon, whiskered owl, ferruginous owl, St. Thomas screech owl, Florida burrowing owl, Hawaiian short-eared owl, Puerto Rican short-eared owl, white-tailed hawk, prairie falcon, red-shouldered hawk, ferruginous hawk, and American osprey.

Isn't it time for federal protection?

SUPPORT H.R. BILL 5821

Write Your Congressmen Today



Campaign Sponsors: The Society for the Preservation of Birds of Prey, Pacific Palisades, Calif., Edgar A. Mearns Bird Club, Cornwall, N.Y., Fyke Nature Association, Ramsey, N.J., Hackensack Audubon Society, Hackensack, N.J., Highlands Audubon Society, Oakridge, N.J., Hunterdon County Bird Club, Flemington, N.J., Monmouth Nature Club, Red Bank, N.J., Montclair Bird Club, Montclair, N.J., R. T. Waterman Bird Club, Poughkeepsie, N.Y., Ridgewood Audubon Society, Ridgewood, N.J., Rockland Audubon Society, Rockland County, N.Y., Sussex County Bird Club, Newton, N.J., and many other contributing, tax-exempt organizations who had to remain anonymous.